

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Influenza Bacillus and its Role as a Cause of Disease.—JOCHMANN (*Deut. Arch. f. klin. Med.*, 1905, Bd. lxxxiv. p. 470) presents his views, which are based on much personal investigation, upon the role that the influenza bacillus plays in the production of disease.

In working with the organism he finds that, in spite of statements to the contrary, hæmoglobin is always necessary in culture media for its growth. He confirms the work of others in regard to the growth of the organism in symbiosis with the staphylococcus, gonococcus, and xerosis bacillus, and finds that the presence of the pneumococcus and streptococcus also favor the growth of the bacillus.

The author investigated the blood of all his cases in which the sputum showed the organism, but was never able to obtain influenza bacilli from this source, and he considers the invasion of the blood by the influenza bacillus very rare in spite of the numerous positive findings of Jehle and others, whom he believes were dealing with agonal or post-mortem infections.

A thorough study of the occurrence of the organism in the diseases of childhood, as measles, diphtheria, scarlet fever, and whooping-cough, was made. He frequently found the organism in the first three diseases present as a saprophyte, and without having any apparent influence on the course of the disease, and its presence is not sufficient evidence to consider the original disease complicated by influenza. All of these diseases, however, showed not infrequently catarrhal bronchitis and lobular pneumonia, from which the organism could be obtained in great numbers. Jochmann considers that these complications are due to the influenza bacillus.

In whooping-cough a bacillus, morphologically and culturally identical with Pfeiffer's bacillus, was so constantly found in the sputum, that the author considers it proved as the cause of whooping-cough, as much as it is proved to be the cause of influenza.

The presence of the organism has been shown in tuberculous and bronchiectatic cavities of the lungs, where it may exist without influencing the course of the pre-existing disease, although in pandemics the influenza bacillus may give rise to a terminal infection in tuberculosis.

The author is opposed to recognizing chronic influenza upon bacteriological findings alone.

Jochmann's recent experience with endemic influenza has shown him that the bacillus is present in certain cases only in small numbers or seems to be absent, while other pathogenic organisms may be pre-

sent in large numbers. This has led him to hold, that, although the bacillus of Pfeiffer is the cause of epidemic influenza, other organisms, especially the pneumococcus, streptococcus, and perhaps the micrococcus catarrhalis, must be considered accountable for endemic cases when a symptom-complex similar to the epidemic form is seen. He suggests that grieppe be the name given to the cases caused by these other organisms, and influenza be reserved for the symptom-complex together with the isolation of the influenza bacillus in large numbers.

He considers bacteriological findings alone insufficient evidence upon which to make the diagnosis of influenza.

Hamartoma (Tumor-like Malformations) of Kidney and Liver.—At the suggestion of Albrecht, GENEWEIN (*Zeit. f. Heilk.*, 1905, Bd. xxvi. p. 430) has studied the small, circumscribed fibrous nodules found so often in the medulla of the kidney, and frequently in the liver, to determine their exact relationship to true tumors. He finds on microscopic examination that the nodules from the kidney, so well circumscribed microscopically, have ill-defined borders, and that their margins run imperceptibly into normal kidney substance. They are formed of regularly arranged connective-tissue fibres, continuous with the connective tissue of the surrounding structures, and contain normal or almost normal kidney tubules, which are probably the descending loops of Henle. These nodules are distinctly different from tumors as defined by Borst and others, in that they are composed of elements differing in no respect from the normal structure of the organs in which they are found, and show no new-formation of their elements. The only difference from the surrounding medulla seems to be in the increase of the connective tissue about and between the tubules. The author believes that they are tumor-like malformations of fetal origin, and suggests for them the name of "hamartoma fibrocanaliculare." Analogous structures were found in the liver. Here the connective tissue was pierced by bile canaliculi. The type of structure and mode of origin were considered to be the same as for the nodules in the kidney.

A Specific Serum for Trypanosoma Brucei and its Action upon Trypanosoma Gambiense.—KLEINE and MOLLERS (*Zeit. f. Hygiene und Infekt.*, 1906, Band lii. p. 229) inoculated asses with the serum of rats inoculated with *Trypanosoma brucei*. It was impossible to use the blood of rats, for this produced grave constitutional disturbances in the asses owing to the resulting hæmolysis. By centrifugalizing the defibrinated blood of the rats a clear serum could be obtained containing enormous numbers of trypanosomes. 30 c.c. of serum was given at a dose and four doses were given at fourteen-day intervals. After the second dose the serum of the ass showed protective substance against trypanosoma infection in mice, which the normal serum did not contain; 0.5 c.c. of serum protected mice and prevented the appearance of trypanosomes in the blood against doses of 0.2 c.c. of trypanosoma laden blood injected intraperitoneally, while control mice died in five to six days. The serum had no curative properties, though it delayed the death of the animals. Much the same results were obtained if guinea-pigs instead of mice were used. Against infections by *Trypanosoma gambiense* there was no specific action, though repeated doses of the *T. brucei* serum retarded definitely the appearance and devel-

opment of *T. gambiense* in the blood of infected mice. The asses that furnished this serum did not develop an active immunity, but, on the other hand, emaciated and died. Microscopic examination of the blood failed to show trypanosomes, but if large quantities of serum (20 c.c.) were injected into dogs, the dogs developed trypanosomiasis, from which they died. The authors believe that in the ass the trypanosomes acquire an immunity against the serum.

Working with brilliant green, Wendelstadt and Fellmer (*ibid.*, p. 263) have discovered that this substance has much the same effect upon the trypanosomes in infected animals as was shown to exist for trypan-roth by Shiga and Ehrlich. Injections of brilliant green in rats and apes whose blood is swarming with nagano trypanosomes causes a disappearance of the organisms from the blood and prolongs the life of the animals. A combination with arsenic increases the action and often brings about a cure. For a certain time after the injections of brilliant green the blood of the treated animal is not infectious. As the trypanosomes are destroyed in the blood curious forms of the organism are found which have a cystic appearance. They are found principally in the spleen. The author believes it possible that these forms may have something to do with the life cycle of the organism.

HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF

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Preservation of Milk.—BEHRING, who advocates the treatment of milk for infants with formalin, has asserted that the presence of one part of the preservative in 4000 parts of milk makes no appreciable difference in the taste of the milk, which statement is denied by DR. LEO SCHAPS (*Zeitschrift für Hygiene und Infektionskrankheiten*, Bd. l. p. 247), who finds that in the proportion of 1 in 10,000 it causes an objectionable taste, which is perceptible when the proportion is as small as 1 in 40,000. While formalin checks the development of the lactic acid bacteria, its action upon staphylococci intentionally introduced was found to be far less marked, even when the proportion was raised to 1 in 5000, which strength was found to be not effective against tubercle bacilli placed in both raw and cooked milk. Behring's statements are controverted also by PAUL SOMMERFELD (*ibid.*, p. 153), who found that while formalin in the proportion of 1 to 5000 or 1 to 10,000 has a marked inhibitory influence on milk bacteria when the milk is kept at 50° to 60°, it has hardly any influence in diminishing their number after twenty-four hours, when the milk is kept at 68° and above. When the treated milk was kept at ordinary incubator temperature it yielded about the same number of bacteria per cubic centimetre as the control specimens. Pathogenic bacteria (typhoid and diphtheria) added to